

1	<b>SPECIFIC SIGNAL DISCRIMINATING (E.G., COMPARING, SELECTING, ETC.) WITHOUT SUBSEQUENT CONTROL</b>	39	.By frequency
2	.By phase	40	..Comparison between plural inputs
3	..Comparison between plural inputs (e.g., phase angle indication, lead-lag discriminator, etc.)	41	...With synchronous detection
4	...With transducer	42	...Fixed frequency reference signal
5	...With input derived from feedback	43	...With logic or bistable circuit
6	...With electron space discharge	44	...With predetermined frequency selection
7	...With reference signal	45	...Including sampling or reference frequency
8	....With varying frequency	46	...Including plural frequency detection
9	....With sampling	47	..Frequency detection
10	....Uniform pulse waveform	48	...With counting
11	....With transformer	49	...With logic or bistable circuit
12	...With logic or bistable circuit	50	.By amplitude
13	.By shape	51	..With sensing amplifier
14	..Slope	52	...Differential amplifier
15	...With direction (i.e., positive or negative)	53	....Current mirror
16	..Having feedback	54	....Having feedback
17	..With reference signal	55	.....Cross-coupled
18	.By presence or absence pulse detection	56	....With reference signal
19	..Arbitration	57	...With latching type element (e.g., flip-flop, etc.)
20	..Monitoring (e.g., failure detection, etc.)	58	..Maximum or minimum amplitude
21	..With variable frequency source	59	...Employing input compared to output
22	.By pulse noncoincidence	60	...Employing input compared to reference derived therefrom
23	.By pulse coincidence	61	...By diode-capacitor network
24	..Edge sensing	62	...Maximum and minimum amplitude
25	..With uniform spacing	63	..Comparison between plural varying inputs
26	..With pulse width detecting	64	...With logic or bistable circuit
27	..With reference	65	...Differential input
28	.By polarity	66	....Current mirror
29	..Selection of a particular polarity	67	....Having feedback
30	..Opposite polarity	68	...Input provides varying reference signal
31	.By pulse width or spacing	69	...With plural paths
32	..With shock-excited circuit	70	....With single output
33	..With sampling	71	...Three or more inputs
34	..Narrow pulse elimination or suppression	72	..Input signal compared to reference derived therefrom
35	..Separating by duration or gap (e.g., duty cycle, etc.)	73	..Reference derived by feedback
36	..Selection of a particular pulse width	74	..Input signal compared to plural fixed references
37	..Comparison by threshold or reference	75	...Three or more
38	..With plural paths	76	...With logic or bistable circuit
		77	..Input signal compared to single fixed reference

78	...Reference level crossover detecting	114 115	..Of output rectangular waveform ...Frequency division
79	....Zero crossover	116	...Frequency multiplication
80	...Reference determined by threshold of single circuit element	117 118	.Frequency division ...Having discrete active device (e.g., transistor, triode, etc.)
81	....With transistor	119	..Frequency multiplication (e.g., harmonic generation, etc.)
82	...Plural sources of input signal	120	...With plural outputs
83	...Temperature compensation	121	....Selective
84	...With bridge circuit	122	...Doubling
85	...Inverting input or output	123	...With particular tube or distributed parameter element
86	...With transformer	124	.By periodic switching (e.g., chopper, etc.)
87	...Having feedback	125	.Generating parabolic or hyperbolic output
88	...With source as reference	126	.Generating staircase output
89	...With differential amplifier	127	..With differential amplifier
90	..Comparison between two characteristics of an input signal	128	..With rectifying element
91	..Including details of sampling or holding	129	.Generating sinusoidal output
92	...With bridge circuit	130	.Generating trapezoidal output
93	...With reference source	131	.Generating sawtooth or triangular output
94	...Sample and hold	132	..With current source or current mirror
95	....Having feedback	133	..With distortion control (e.g., linearization, etc.)
96	....With differential amplifier	134	..With slope or duration control
97	..With logic or bistable circuit	135	..Having digital element
98	.By separating composite signal	136	..Having particular delay or sync
99	.Having selection between plural continuous waveforms	137	..Having feedback
100	<b>SIGNAL CONVERTING, SHAPING, OR GENERATING</b>	138	..Having temperature compensation
101	.Converting input current or voltage to output frequency	139	..Having inductive load
102	.Converting input frequency to output current or voltage	140	..With amplitude control
103	.Converting input voltage to output current or vice versa	141	.Synchronizing
104	.Converting, per se, of an AC input to corresponding DC at an unloaded output	142	..Reset (e.g., initializing, starting, stopping, etc.)
105	.Synthesizer	143	...Responsive to power supply
106	..Having stored waveform data (e.g., in ROM, etc.)	144	..Using multiple clocks
107	..Having digital device (e.g., logic gate, flip-flop, etc.)	145	...Having different frequencies
108	.Current driver	146	...With feedback
109	..Having semiconductive load	147	....Phase lock loop
110	..Having inductive load (e.g., coil, etc.)	148	.....With charge pump
111	..Having capacitive load	149	.....With variable delay means
112	...Push-pull	150	....With digital element
113	.Frequency or repetition rate conversion or control	151	...With counter
		152	...With choice between multiple delayed clocks
		153	...With delay means
		154	..With feedforward
		155	..With feedback

156	....Phase lock loop	183	.Delay line or capacitor storage
157	.....With charge pump		element charges or discharges
158	.....With variable delay means		through a tube to form pulse
159	....With digital element	184	.Rectangular (e.g., clock, etc.)
160	..With counter		or pulse waveform generating
161	..With delay means		by conversion from input AC
162	..Having reference source		(e.g., sine, etc.) wave
163	...By phase	185	.Particular stable state circuit
164	.Generating rectangular (e.g., clock, etc.) or pulse waveform having random characteristic (e.g., random width, etc.)	186	(e.g., tristable, etc.)
165	.Regenerating or restoring rectangular (e.g., clock, etc.) or pulse waveform	187	.Superconductive (e.g., cryogenic, etc.)
166	..Having digital device (e.g., logic gate, flip-flop, etc.)	188	.External effect device (e.g., light, heat, magnetic, or mechanical force sensitive devices, etc.)
167	..Having network providing particular mathematical function (e.g., integrator, etc.)	189	.Minority carrier storage effect
168	..Having inductive device (e.g., transformer, etc.)	190	...Storage diode (e.g., step recovery, etc.)
169	..Having negative resistance device (e.g., tunnel diode, etc.)	191	..With transformer or saturable core device
170	.Slope control of leading or trailing edge of rectangular (e.g., clock, etc.) or pulse waveform	192	...Blocking oscillator
171	.Output pulses having opposite polarities	193	..Negative resistance transistor (e.g., unijunction, etc.)
172	.Rectangular (e.g., clock, etc.) or pulse waveform width control	194	...Four or more layer device, (e.g., trigistor, etc.)
173	..Pulse narrowing	195	..Zener or capacitive diode
174	..Pulse broadening		..Negative resistance diode
175	..Duty cycle control		having "N"-shape characteristic on I-V plot
176	..Having digital device (e.g., logic gate, flip-flop, etc.)	197	(e.g., tunnel diode, backward diode, etc.)
177	..Having inductive device (e.g., transformer, etc.)	198	.Negative resistance diode having "S"-shape characteristic on I-V plot
178	.Rectangular (e.g., clock, etc.) or pulse waveform amplitude control	199	(e.g., four or more layer semiconductor device, etc.)
179	..Gain	200	.Convertible circuit (e.g., bistable to monostable, D-type to T-type, etc.)
180	..Limiting, clipping, or clamping	201	..Initializing, resetting, or protecting a steady state condition
181	.Electromagnetic pulse forming	202	..Circuit having only two stable states (i.e., bistable)
182	.Delay line or capacitor storage element charged or discharged through or by a relaxation oscillator type circuit to form pulse	203	...Dynamic bistable
		204	....Complementary clock inputs
		205	....Master-slave bistable latch
			....Including field-effect transistor
			....Including multi-emitter or multi-collector bipolar transistor
			...Using hysteresis (e.g., Schmitt trigger, etc.)

206	....Including field-effect transistor	239	...Non-overlapping multiple outputs
207	...Including diverse solid state devices (e.g., FET/bipolar, etc.)	240	...Maintaining invariant amplitude
208	...Including field-effect transistor	241	...With counter or shift register
209	....Including enhancement and depletion devices	242	....Having multiple outputs
210	....CMOS	243	...With feedback
211	.....With clock input	244	....With phase comparator or detector
212	....With clock input	245	....Having multiple outputs
213	.....Plural independent clock inputs (i.e., non complementary )	246	...With differential amplifier
214	...Complementary transistors	247	....Having multiple outputs
215	...Having at least two cross-coupling paths	248	...With adder
216	....JK type input	249	....Having multiple outputs
217	....RS or RST type input	250	...With active time delay element
218	....D type input	251	....Having multiple outputs
219	....Particular device at input, output, or in cross-coupling path	252	...With passive time delay element
220	.....With diode	253	....Having multiple outputs
221	.....Parallel RC network in cross-coupling path	254	..Quadrature related (i.e., 90 degrees)
222	.....Resistor in cross-coupling path	255	...90 degrees between input and output
223	...Plural transistors of same conductivity type	256	.Phase inversion (i.e., 180 degrees between input and output)
224	...With single semiconductor device	257	...Multiple outputs
225	...With logic element (e.g., NOR gate, etc.)	258	..Multiple outputs
226	...With single electron tube	259	...Non-overlapping
227	..Monostable	260	..Producing AC power control
228	...Having cross-coupled paths	261	.Having specific delay in producing output waveform
229	...Having differential circuitry	262	..Including significant compensation (e.g., temperature compensated delay, etc.)
230	...With external feedback (i.e., output to input)	263	.Delay interval set by rising or falling edge
231	.Phase shift by less than period of input	264	..Having specific active circuit element or structure (e.g., FET, complementary transistors, etc.)
232	..Dependent on frequency	265	....With counter
233	..Correction to specific phase shift	266	....Differential amplifier
234	...Dependent on variable controlled phase shifts	267	....Electron tube
235	...Dependent on multiple fixed phase shifts	268	...Having specific passive circuit element or structure (e.g., RLC circuit, etc.)
236	...By phase comparator or detector	269	..Multiple outputs with plurality of delay intervals
237	..Variable or adjustable	270	...Variable or adjustable
238	...Quadrature related (i.e., 90 degrees)	271	....Including delay line or charge transfer device

272	...Having specific active circuit element or structure(e.g., FET, complementary transistors, etc.)	305 306 307	..With gas tube .Amplitude control .Baseline or DC offset correction
273	....With counter	308	..Variable attenuator
274	....Differential amplifier	309	..By limiting, clipping, or clamping
275	....Electron tube		....Transient or signal noise reduction
276	..Single output with variable or selectable delay	310	....By filtering
277	...Including delay line or charge transfer device	311 312	....By feedback limiting-clamping
278	...Having specific active circuit element or structure (e.g., complementary transistors, etc.)	313 314	....Using 3 or more terminal type nonlinear devices only ....Using diode type nonlinear devices only
279	....With counter	315	....Providing constant input/ output amplitude level ratio
280	....Differential amplifier		....By feedback control
281	....Field-effect transistor	316	....Distortion compensation
282	....Electron tube	317	...In input or output circuit
283	...Having specific passive circuit element or structure (e.g., RLC circuit, etc.)	318 319 320	....For interstage coupling .....Using diode
284	..Including delay line or charge transfer device	321	....Clamping of output to voltage level
285	..Having specific active circuit element or structure (e.g., complementary transistors, etc.)	322 323 324	....Of output current ...Feedback
286	...With counter	325	....By using diverse-type nonlinear devices
287	...Differential amplifier		...Using only diode active elements
288	...Field-effect transistor	326	....Avalanche or negative resistance device (e.g., zener diode, tunnel diode, etc.)
289	...Electron tube		...Using only transistor active elements
290	..Having specific passive circuit element or structure (e.g., RLC circuit, etc.)	327	....Field-effect type device
291	.Clock or pulse waveform generating	328	...With tuned circuit
292	..Clock fault compensation or redundant clocks	329 330	...With rectifier or nonlinear impedance
293	..With plural paths in network	331	..Maintaining constant level output
294	...With common output		...With feedback
295	..Plural outputs	332	..Interstage coupling (e.g., level shift, etc.)
296	...Plural clock outputs with multiple inputs	333	<b>SPECIFIC INPUT TO OUTPUT FUNCTION</b>
297	...Clock bus	334	.By differentiating
298	..Single clock output with multiple inputs	335	.By integrating
299	..Single clock output with single clock input or data input	336 337	..Having switched capacitance
300	..With saturable inductance	338	..With thermionic tube
301	..With electron beam type tube	339	..With summing or counting
302	..With storage diode	340	..Single vacuum tube
303	..With rectifier	341	..With compensation
304	..With inductive device (e.g., transformer, etc.)	342 343	..With transducer ..With rectifier circuit

344	..Including RC circuit	387	..Control signal derived from or responsive to input signal
345	..Having feedback	388	...Additional external control signal
346	.Exponential	389	..Insulated gate FET (e.g., MOSFET, etc.)
347	..Square root	390	...With capacitive bootstrapping
348	...RMS	391	...Complementary metal-oxide semiconductor (CMOS)
349	..Square function	392	.Delay controlled switch (e.g., fixed, single time of delay control, etc.)
350	.Logarithmic	393	..With variable or multiple adjustable time of delay control (e.g., variable charge-discharge, on-delay/ off-delay control, etc.)
351	..With cascade network	394	..With field-effect device
352	..With summing	395	...Propagation through plural delay devices or paths
353	..With vacuum tube	396	...With plural switching elements (e.g., sequential, etc.)
354	.Absolute value	397	...Including negative resistance device in delay circuit (e.g., unijunction transistor, etc.)
355	.Combining of plural signals	398	..For predetermined time period
356	..Product	399	..With field-effect device
357	...Quadrant	400	..Propagation through plural delay devices or paths
358	...Having feedback	401	..With plural switching elements (e.g., sequential, etc.)
359	...Differential amplifier	402	..Including negative resistance device in delay circuit (e.g., unijunction transistor, etc.)
360	..Quotient	403	.Parallel controlled paths
361	..Summing	404	..Field-effect transistor
362	.With compensation	405	..Bipolar transistor
363	.Having feedback	406	..Electron tube
364	.With vacuum tube	407	.Converging with plural inputs and single output
365	<b>GATING (I.E., SWITCHING INPUT TO OUTPUT)</b>	408	..Field-effect transistor
366	.Superconductive (e.g., cryogenic, etc.) device	409	...Push-pull circuit
367	..Josephson junction	410	....With complementary transistor devices
368	..Critical current control	411	..Bipolar transistor
369	..External control (e.g., piezoelectric, light, etc.)	412	...Push-pull circuit
370	...Magnetic field control	413	....With complementary transistor devices
371	...Temperature control	414	..Electron tube
372	..Inductive effect	415	.Diverging with single input and plural outputs
373	..Layout	416	..Field-effect transistor
374	.Accelerating switching	417	..Bipolar transistor
375	..Saturation prevention	418	..Electron tube
376	..Turn-on		
377	..Turn-off		
378	.Compensation for variations in external physical values (e.g., temperature, etc.)		
379	.Signal transmission integrity or spurious noise override		
380	..Preventing quick rise gating current (i.e., $di/dt$ )		
381	..Preventing quick rise gating voltage (i.e., $dv/dt$ )		
382	..Parasitic prevention or compensation (e.g., parasitic capacitance, etc.)		
383	..Ensuring fully conducting state		
384	..Switch noise signal		
385	...Contact bounce from mechanical switch		
386	....With clock input		

419	.Utilizing three or more electrode solid-state device	456	.....Plural
420	..Breakdown characteristic (e.g., punch-through, tunneling, etc.)	457	.....Combined with diac
421	...Zener	458	.....Combined with diverse four or more layer device
422	...Avalanche	459	.....With bipolar transistor
423	...Bridge circuit	460	.....Plural SCR's
424	...Field-effect transistor	461	.....Inverse parallel connection
425	..Bilateral transistor	462	.....With bipolar transistor
426	...Plural	463	.....With bipolar transistor
427	..Field-effect transistor	464	....Having plural four or more layer devices
428	...With silicon controlled rectifier (SCR)	465	....DC supply
429	...Four or more electrode solid-state device	466	....PUT (i.e., programmable unijunction transistor)
430	...JFET (i.e., junction field-effect transistor)	467	....Four electrodes
431	....MESFET (i.e., metal semiconductor field-effect transistor)	468	....SCR and unijunction transistor
432	...With bipolar transistor	469	....Triac
433	....Bi-CMOS	470	....Plural devices
434	....Insulated gate FET (e.g., MOSFET, etc.)	471	....Series anode-cathode connection
435	....GaAs	472	....Plural paths
436	....Plural devices in series	473	....Parallel connection
437	....Complementary metal-oxide semiconductor (CMOS)	474	....With bipolar transistor
438	..Four or more layer device (e.g., thyristor, etc.)	475	....SCR and bipolar transistor
439	...Bipolar transistor circuit configuring SCR device	476	....Triac
440	...GTO (i.e., gate turnoff)	477	..Unijunction transistor (UJT)
441	....Plural or combined with other four or more layer device	478	..Bipolar transistor
442	....Separate ON and OFF control circuit	479	...Special four or more electrode device (e.g., multiple bases, three electrode bipolar with FET gate, etc.)
443	....Transformer or inductor in control circuit	480	....Multiple emitter transistor
444	...Complex wave supply	481	....Multiple collector transistor
445	....Silicon controlled rectifier (SCR)	482	...Plural
446	.....Triac	483	....Darlington connection
447	...AC supply	484	....Opposite conductively (i.e., complementary)
448	....Device in bridge	485	....Control circuit in cascade
449	....PUT (i.e., programmable unijunction transistor)	486	....Control circuit in totem pole
450	....Four electrodes	487	....Control circuit in cascade
451	....Zero point switching	488	....Control circuit in totem pole
452	.....With triac	489	....Control circuit with common emitter
453	....Silicon controlled rectifier (SCR)	490	.....With current mirror
454	....With unijunction transistor	491	.....With emitter follower
455	.....Triac	492	....Control circuit with common collector
		493	.Utilizing two electrode solid-state device
		494	..Bridge circuit
		495	...Combined with diverse device in at least one arm

496	...Plural	534	.Having particular substrate
497	...Active element in diagonal arm		biasing
498	..Negative resistance	535	...Having stabilized bias or
499	..."N"-shape curve on I-V plot (e.g., tunnel diode type, etc.)	536	power supply level
500	..."S"-shape curve on I-V plot (e.g., pnnp diode type, etc.)	537	....Charge pump details
501	....Hyperconductive diode	538	....With field-effect transistor
502	..Breakdown characteristic (e.g., zener diode, etc.)	539	..Stabilized (e.g., compensated, regulated, maintained, etc.)
503	..PIN diode	540	...Using bandgap
504	..PN junction diode	541	...With voltage source regulating
505	...Inverse parallel connection	542	....With field-effect transistor
506	.Three or more electrode electron tube	543	...With diverse type transistor
507	.Two electrode electron tube	544	...Using field-effect transistor
508	..Bridge circuit	545	..Power conservation or pulse
509	<b>EXTERNAL EFFECT</b>	546	type
510	.Magnetic	547	..Including signal protection or
511	..Utilizing Hall effect		bias preservation
512	.Temperature	548	...With field-effect transistor
513	..With compensation for temperature fluctuations	549	..With selectively or alternately
514	.Light	550	DC or AC input
515	..Elements forming an array		..With oscillator or interrupter
516	.Utilizing conversion of mechanical variations into electrical variations (e.g., vibration sensitive, etc.)	551	..With hum or interaction
517	.Responsive to proximity or touch	552	prevention
518	<b>WITH PARTICULAR CONTROL</b>	553	..With particular filament
519	.Plurality of load devices	554	heating circuit
520	.Plural active components included in a controlling circuit	555	.Unwanted signal suppression
521	..Connected in inverse parallel	556	..Active filter
522	..Gaseous tube	557	...Adjustable
523	.Gaseous tube	558	....Switched capacitor filter
524	<b>SPECIFIC IDENTIFIABLE DEVICE, CIRCUIT, OR SYSTEM</b>	559	....Selective type signal
525	.Fusible link or intentional destruct circuit	560	filtering (e.g., from low pass
526	.Redundant	561	to high pass, etc.)
527	.Superconductive (e.g., cryogenic, etc.) device	562	...Notch or bandreject
528	..Josephson junction	563	...Bandpass
529	..Impact ionization	564	...Lowpass
530	.With specific source of supply or bias voltage	565	...Highpass
531	..Fluctuating or AC source with rectifier or filter	566	.Nonlinear amplifying circuit
532	...With particular filter circuit	567	..With operational amplifier
533	...With battery connected across rectifier	568	...With field-effect transistor
		569	..Integrated structure
		570	..With specific layout or layout
			interconnections
		571	...Having field-effect transistor
			device
			.Thin film
			.Negative resistance type
			..Unijunction transistor
			..Having "N"-shape curve on I-V
			plot (e.g., tunnel diode type, etc.)
			..Having "S"-shape curve on I-V
			plot (e.g., pnnp diode type, etc.)

572        ..Secondary emissive type  
573        ...Electron multiplier type  
574        .Utilizing a three or more  
              electrode solid-state device  
575        ..Darlington connection  
576        ..Complementary transistors  
577        ..Multiple emitter transistor  
578        ..Multiple collector transistor  
579        ..Minority carrier storage  
580        ..Transistor breakdown device  
              (e.g., avalanche, zener, punch  
              through, etc.)  
581        ..Field-effect transistor  
582        ..Four or more layer device  
              (e.g., silicon-controlled  
              rectifier, etc.)  
583        .Utilizing two electrode solid-  
              state device  
584        ..Breakdown diode (e.g., zener  
              diode, avalanche diode, etc.)  
585        ..Minority carrier storage diode  
              (e.g., enhancement diode,  
              etc.)  
586        ..Capacitive diode  
587        ..Bridge circuit  
588        .With bridge circuit  
589        .With bootstrap circuit  
590        .With particular feedback  
591        .Tube performs plural functions  
592        .With oscillation prevention  
593        .With distributed parameter  
              circuit  
594        .With particular coupling or  
              decoupling  
595        .With particular connecting  
596        .Including oscillatory or shock-  
              excited circuit  
597        .With particular grid control  
598        .With particular tube structure  
599        ..Vacuum tube type  
600        ...Beam tube structure  
601        ..Gas tube  
602        ...With particular electrode  
              arrangement  
603        **MISCELLANEOUS**

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